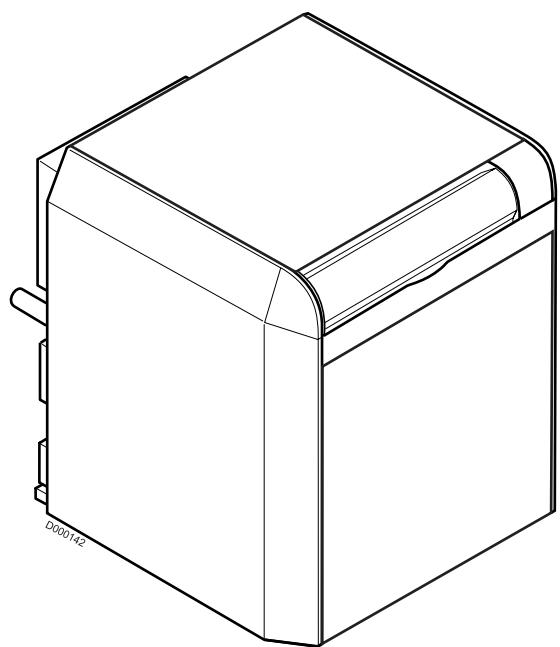


Gas-fired boilers

GAS 360 S



Installation and Service Manual

Declaration of conformity C E

Declaration of conformity A.R. 8/1/2004 - BE

Manufacturer

Remeha B. V.
Postbus 32
7300 AA APELDOORN
+31 55 5496969
+31 55 5496969

Issued by

See end of notice

We hereby certify that the range of equipment specified below is in accordance with the format stated in the EC declaration of comformity, that it is manufactured and distributed in accordance with the regulations and requirements in european directives and with the regulations and requirements defined in the Royal Decree dated 8th January 2004.:

Product type

Floor-standing gas boiler GAS 360 S

Models

8 - 10 - 12 - 14 sections

Standard applied

- Royal Decree dated 8th January 2004
- 90/396/EEC Gas Appliance Directive
Reference Standard: EN 297 ; EN 656 ; EN 437
- 2006/95/EC Low Voltage Directive
Reference Standard: EN 60.335.1
- 2004/108/EC Electromagnetic Compatibility Directive
Reference Standard: EN 50.081.1 ; EN 50.082.1 ; EN 55.014
- 92/42/EEC Efficiency Directive ★★C E

Low temperature gas boiler

Inspecting organisation

GWI (D-Essen)

Measured values

NOx: < 200 mg/kWh

CO: < 15 mg/kWh

Date:

Signature

Technical Director

Mr. Bertrand Schaff



Contents

1	Introduction	5
1.1	Used symbols	5
1.2	General	5
1.3	Homologations	5
1.3.1	User country	5
1.3.2	Directive 97/23/EC	5
2	Safety instructions and recommendations	6
2.1	Safety instructions	6
2.2	Recommendations	6
3	Technical description	7
3.1	General description	7
3.2	Technical characteristics	8
3.3	Main parts	9
3.4	Operating principle	10
4	Installation	12
4.1	Regulations governing installation	12
4.1.1	France	12
4.1.2	Other countries	12
4.2	Package list	12
4.3	Mounting	13
4.3.1	Position of the boiler	13
4.3.2	Ventilation	14
4.3.3	Main dimensions	15
4.3.4	Assembling the appliance	15
4.4	Hydraulic connections	16
4.4.1	Regulations	16
4.4.2	Hydraulic connection of the heating circuit	16
4.4.3	Hydraulic connection of the water circuit for domestic use	16
4.4.4	Water treatment	16
4.5	Gas connection	17
4.6	Connection to a chimney	17
4.7	Electrical connections	18
4.8	Skeleton Diagrams	18
5	Start-up	19
5.1	Control panel	19
5.2	Check points before commissioning	19
5.3	Commissioning procedure	19
5.4	Gas settings	20
5.4.1	Changing the burner injectors	20
5.4.2	Changing the ignition burner injector	20
5.4.3	Setting the injector pressure	21
5.4.4	Setting the start up pressure	22
5.4.5	Attaching the label	22
5.4.6	Pressure setting and marking of calibrated injectors	23
5.5	Checks and adjustments after commissioning	23
5.6	Changing the settings	23
6	Stopping the boiler	24
6.1	Precautions to take if there is a danger of frost	24
6.2	Precautions to take in the event of prolonged shutdown (one year or more)	24

7 Checking and maintenance	25
7.1 Checks	25
7.1.1 Checking the ignition burner	25
7.1.2 Safety devices	25
7.1.3 Water level	25
7.1.4 Checking burner safety	26
7.1.5 Checking the safety thermostat	26
7.1.6 Checking the downdraught thermostat	26
7.2 Maintenance	27
7.2.1 Cleaning main burner and ignition burner	27
7.2.2 Cleaning of the heating body	28
7.2.3 Cleaning painted surfaces	28
7.3 Troubleshooting	29
7.3.1 Error messages	29
7.3.2 Incidents and solutions	29
8 Spare parts - GAS 360 S	31
8.1 Boiler body + Draught diverter	31
8.2 Gas line	32
8.2.1 8-10-12 sections	32
8.2.2 14 sections	33
8.3 Control panel K	34
8.4 Control panel K + Components	34
8.5 Metal casing for control panel K	35
8.6 Boiler body insulation	35
8.7 Casing	36

1 Introduction

1.1 Used symbols



Caution danger

Risk of injury and damage to equipment. Attention must be paid to the warnings on safety of persons and equipment.



Specific information

Information must be kept in mind to maintain comfort.



Reference

Refer to another manual or other pages in this instruction manual.

1.2 General

Congratulations on your choice of a high quality product. We strongly advise you to read the following instructions in order to guarantee the optimal operation of your appliance. We are sure that it will be entirely to your satisfaction and will meet with all of your expectations.

- ▶ Keep these instructions in a safe place close to the appliance.
- ▶ For a proper operating of the boiler, follow carefully the instructions.

▶ The manufacturer is not liable for any improper use of the appliance or failure to maintain or install the unit correctly (the user shall take care to ensure that the system is installed by a qualified engineer).

▶ In the interest of customers, De Dietrich Thermique SAS are continuously endeavouring to make improvements in product quality. All the specifications stated in this document are therefore subject to change without notice.

1.3 Homologations

CE identification no: **CE-0085AU0115**

8 sections: Type B11_{BS} boiler

10-14 sections: Type B11 boiler

France: Performance class III boiler according to ATG B 84 recommendations.

1.3.1 User country

User country	Gas category	Gas type	Connection pressure (mbar)
ES, GB	II _{2H3P}	G20	20
		G31	37
HU	II _{2H3P}	G20	25
		G31	50

Remeha Gas 360 S boilers are delivered preset for operation on group H natural gases.



For operation on another gas group, see the chapter "Gas settings" (Page: 20).

1.3.2 Directive 97/23/EC

Gas and oil boilers with a maximum operating temperature of 110°C and hot water tanks with a maximum operating pressure of 10 bar pertain to article 3.3 of the directive, and therefore, cannot be CE-marked to certify compliance with the directive 97/23 EC.

Compliance of Remeha boilers and DHW tanks with the codes of practice, required by article 3.3 of directive 97/23/EEC, is certified by the CE marking relative to directives 90/396/EEC, 92/42/EEC, 2006/95/EC and 2004/108/EC.

2 Safety instructions and recommendations

2.1 Safety instructions

■ Fire hazard

 Do not stock products of an inflammable nature close to the appliance.

 If you smell gas, do not use a naked flame, do not smoke, do not operate electrical contacts or switches (doorbell, lights, motor, lift, etc.).

1. Isolate the gas supply

2. Open the windows

3. Extinguish all flames

4. Evacuate the premises

5. Contact a qualified professional

6. Inform the gas supplier

■ Risk of intoxication

 Do not obstruct the air inlets in the room (even partially).

 If you smell flue gases

1. Switch the appliance off

2. Open the windows

3. Evacuate the premises

4. Contact a qualified professional

■ Risk of being burnt

 Avoid direct contact with the flame viewport.

 Depending on the settings of the appliance:

- The temperature of the flue gas conduits may exceed 60°C
- The temperature of the radiators may reach 95°C
- The temperature of the domestic hot water may reach 65°C

■ Risk of damage

 Do not stock chloride or fluoride compounds close to the appliance.

 Install the appliance in frost-free premises.

Do not neglect to service the appliance: Contact a qualified professional or take out a maintenance contract for the annual servicing of the appliance.

2.2 Recommendations

 Only qualified professionals are authorised to work on the appliance and the installation.

 Before any work, switch off the mains supply to the appliance.

Check regularly that the installation contains water and is pressurised.

Keep the appliance accessible at all times.

Avoid draining the installation.

The appliance should be on Summer or Antifreeze mode rather than switched off to guarantee the following functions:

- Frost protection
- Protection against corrosion on domestic hot water tanks fitted with a titanium anode

3 Technical description

3.1 General description

Boilers in the **GAS 360 S** range have the following characteristics:

- Cast iron floor-standing gas boiler.
- Connecting to a chimney.
- Atmospheric burner (2 stages).
- Heating body in cast iron with overlapping studs making it possible to obtain extremely high efficiency. Also, the baffling in the smoke circuits limits the natural chimney effect and gives high performance yields.
- Efficient insulation of the entire boiler unit for very low losses to the ambient air.

i The figure given after Remeha Gas 360 S indicates the number of sections which make up the boiler.

For example: Remeha Gas 360 S/8: 8 section boilers

3.2 Technical characteristics

Models Gas 360 S/		8	10	12	14
Useful output	Stage1	kW	36	45	54
	Stage2	kW	63	81	99
Power input	Stage1	kW	39.4	49.1	58.8
	Stage2	kW	68.9	88.4	107.8
Number of sections		8	10	12	14
Mass flue gas flow rate ^{(1) (2)}	Stage1	Kg/h	140	166	199
	Stage2	Kg/h	138	177	216
Smoke temperature ^{(1) (2)}	°C	135	135	135	135
CO ₂ (Natural gas H) ⁽¹⁾	%	7.4	7.4	7.4	7.4
Ionization current ⁽¹⁾	µA	3	3	3	3
Required depressurisation at the nozzle ⁽¹⁾	mbar	0.04	0.04	0.04	0.04
Minimum output temperature	°C	30	30	30	30
Maximum output temperature	°C	90	90	90	90
Maximum operating pressure	bar	6	6	6	6
Electrical connection	V/Hz	230/50	230/50	230/50	230/50
Electrical power ^{(1) (3)}	W	25	25	25	25
Gas connection	inch	R1	R1	R1	R1
Heating connection	inch	R1 1/2	R1 1/2	R1 1/2	R1 1/2
Internal diameter flue gas nozzle	mm	180	200	200	225
Loss of load hydraulic circuit ⁽¹⁾	ΔT= 10K	mbar	56	120	216
	ΔT= 15K	mbar	25	53	96
	ΔT= 20K	mbar	14	30	54
Water content	l	32.6	39.8	47	54.2
Net weight (without water)	kg	257	305	357	408

(1) At nominal output (Stage2)

(2) Boiler temperature: 80 °C

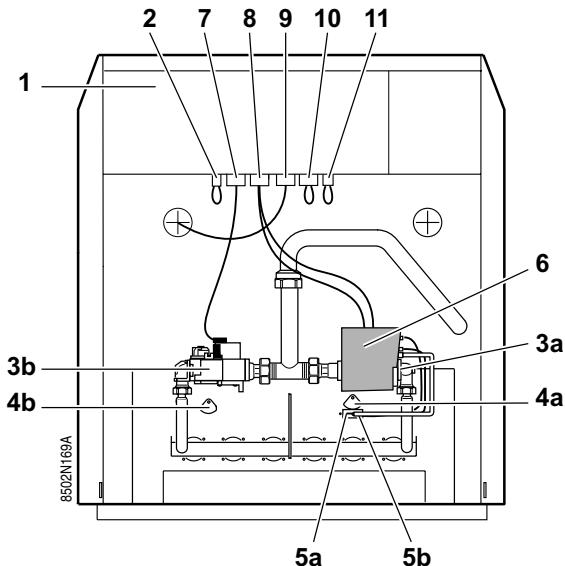
(3) Electrical power of the boiler **only** with no accessories

Conditions of use:

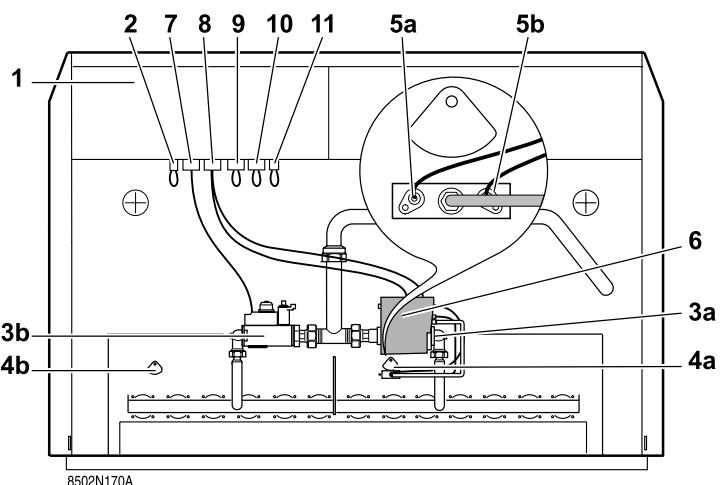
- Max. safety temperature: 110 °C
- Max. operating pressure: 6 bar
- Thermostat adjustable from 30 to 90°C
- Safety thermostat: 110 °C

3.3 Main parts

8 sections



10-14 sections



1. Control panel

The control panel gives priority to producing domestic hot water

2. Factory fitted bridge

Connection for gas pressure switch

Natural gas: 12.5 mbar

Propane: 20 mbar

3. a: Gas valve - Stage1 - Type VK4100C1026

b: Gas valve - Stage2 - Type VK4105C1066 (8-12 sections) -
Type VR4605CB1033 (14 sections)

4. a: Flame inspection window - Stage1

b: Flame inspection window - Stage2

5. Complete ignition burner

a: **Ignition electrode**: This ensures ignition burner ignition using a high voltage spark.

b: **Ionization probe**: This detects the presence of a burner ignition flame through ionization.

6. Safety box

The safety control box manages and checks the boiler's ignition, operating and shutdown sequences.

Type Honeywell S 4565 BF 1161.

i After resetting, the safety control box remains on standby for around 1 minute.

7. Valve connector - Stage2

8. Safety control box and valve connector - Stage1

9. Downdraught thermostat

The downdraught thermostat located in the draught diverter cuts off the gas supply and puts the boiler into safety shutdown in the event of flue gas blow back

8 sections: Supplied

10-14 sections: Option (Factory fitted bridge) - Package RD19

10. Factory fitted bridge

Not used

11. Factory fitted bridge

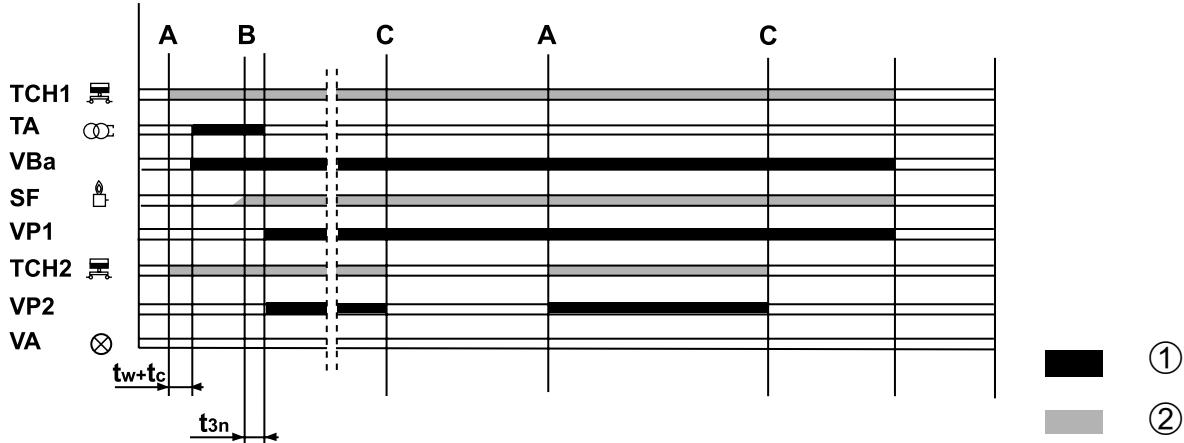
Connection for cyclical tightness controller (Option - Package RD18)

3.4 Operating principle

S4565 BF 1161 safety box

The ignition and burner surveillance sequences are ensured by the safety box.

■ Normal operating cycle



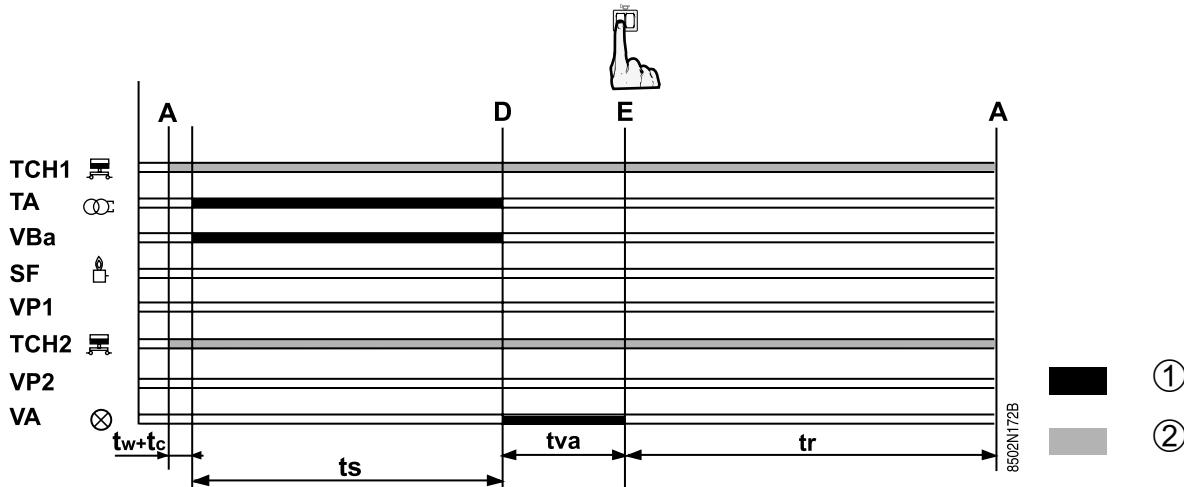
If heating is required, the boiler thermostat **TCH 1** closes the contact.

The ignition transformer **TA** integrated into the safety control box and the safety flap on the gas valve (supplying the ignition burner) are switched on.

Gas from the ignition burner is ignited by the ignition electrode and within the time interval **t_s** ; a minimum current of $0.9 \mu\text{A}$ appears on the ionization sensor **SF** and the gas valve regulation flap (supplying the principal burner) opens.

If, moreover, **TCH2** is required, the 2nd stage valve **VP2** opens.

■ Operating cycle on safety (start up without flame signal)



- If the flame is not detected before the end of the safety time **t_s** , the safety control box goes into safety lockout and the safety lockout warning light comes on.
To restart the heater, press the reset button on the safety box.
- If there is a loss of flame in normal operation, the box automatically repeats the start up sequence.
- If a flame is present before start-up, the safety control box remains on standby.

■ Resetting

The box is reset after going into safety by pressing the reset button. If the reset button does not work, wait at least 15 seconds before trying a second time.

After activating the reset button, the warning light goes out and the safety control box restarts **after a waiting time of around 1 minute**.

i The box may be on safety on its first start up: press the reset button to release it.

i If the reset button is pressed in normal operation, the gas valves close and the box starts a new ignition sequence.

■ Legend

- A** Heat demand - 1st/2nd stage
- B** Formation of flame in ignition burner
- C** Heat demand - 1st stage
- D** On safety through absence of flame signal
- E** Press the reset button
- SF** Burner flame signal
- TA** Ignition transformer
- TCH1** Stage 1 boiler thermostat
- TCH2** Stage 2 boiler thermostat
- VA** Safety lockout warning light
- VBa** Ignition burner valve
- VP1** Main burner valve - 1st stage
- VP2** Main burner valve - 2nd stage
- t3n** Flame stabilisation time: Wait 3 seconds
- tr** Restart waiting time: 1 minutes
- ts** Safety time: 55 s max
- tva** Alarm time: 15 seconds
- tw** Waiting time: 0 seconds
- tc** Auto-control time: 1.5 seconds
- ①** Box output signals
- ②** Required input signals

4 Installation

4.1 Regulations governing installation

4.1.1 France

■ Residential buildings

Statutory terms and conditions of installation and maintenance:

The installation and maintenance of the appliance must be carried out by a qualified professional in compliance with the statutory texts of the codes of conduct in force, particularly:

- Order of 27 April 2009 amending the Order of 2 August 1977 Technical and safety rules applicable to combustible gas and liquefied hydrocarbon installations situated inside residential buildings and their annexes.

- NF P 45-204 standards

Gas installation, (formerly DTU 61-1, gas installations: April 1982, addendum no 1: July 1984).

- Local Sanitary Regulations

For appliances connected to the electricity network:

- NF C 15-100 standards Low voltage electrical installation - Rules..

■ Establishments open to the public

Statutory terms and conditions of installation:

The installation and maintenance of the appliance must be carried out in compliance with the statutory texts and rules of the codes of conduct in force, particularly:

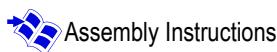
- Safety regulations against fire and panic in establishments open to the public:

- a. General regulations

4.1.2 Other countries

Installation and maintenance of the boiler must be carried out by a qualified professional in compliance with prevailing local and national regulations.

4.2 Package list



For all appliances:

- Articles GZ - Installations operating on combustible gases and liquefied hydrocarbons.

Then, depending on use:

- Articles CH-Heating, ventilation, refrigeration, air conditioning and production of steam and domestic hot water.

- b. Instructions specific to each type of establishment open to the public (hospitals, stores, etc.).

■ Certificate of compliance

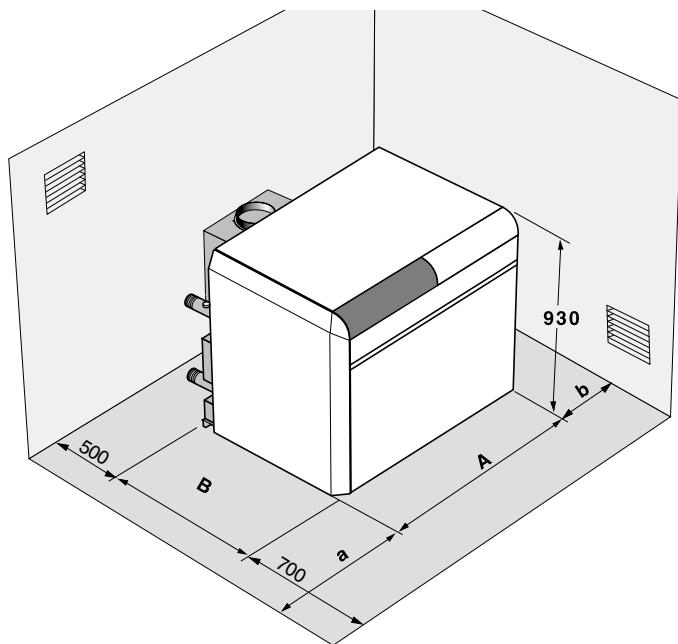
In application of Article 25 of the Order of 27 April 2009 amending the Order of 2 August 1977 amended and Article 1 of the amended Order of 05/02/1999, the installer is required to draw up certificates of conformity approved by the Ministers responsible for construction and gas safety:

- Different forms (forms 1, 2 or 3) for a new gas installation.

- "Model 4" in particular after replacing a furnace with a new one.

4.3 Mounting

4.3.1 Position of the boiler



- The dimensions (in mm) correspond to the minimum recommended dimensions needed to ensure adequate accessibility around the boiler.
- Dimensions **a** and **b** correspond to the dimensions to be respected to ensure clearance of the assembly tool (simplified JD or JD-TE Plus) - delivery body not assembled.

if $a = 1400$ mm ; $b = 500$ mm

if $a = 500$ mm ; $b = 1400$ mm

⚠ It is forbidden to store inflammable products and materials in the boiler room or close to the boiler, even temporarily. A safety distance of at least 2 metres should be respected.

Gas 360 S/	8	10	12	14
A (mm)	846	1113	1280	1447
B (mm)	952	1007	1007	1007

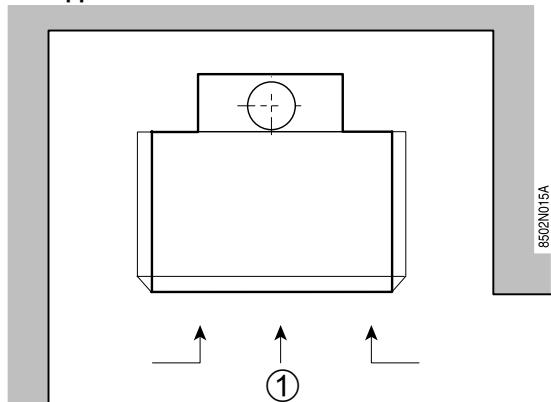
4.3.2 Ventilation

Caution:

In order to avoid damage to the boiler, it is necessary to prevent the contamination of combustion air by chlorine and/or fluoride compounds, which are particularly corrosive. These compounds are present, for example, in aerosol sprays, paints, solvents, cleaning products, washing products, detergents, glues, snow clearing salts, etc. Therefore:

- Do not pull in air evacuated from premises using such products: hairdressing salons, dry cleaners, industrial premises (solvents), premises containing refrigeration systems (risk of refrigerant leakage), etc.
- Do not stock such products close to the boilers.

If the boiler and/or peripheral equipment are corroded by such chloride or fluoride compounds, the contractual guarantee cannot be applied.



 **① The combustive air must reach the burner from the front.**

The location of air inlets in relation to the high ventilation openings shall ensure that the air is renewed in the entire volume of the boiler room.

Please refer to the prevailing regulations in your country.

■ France

Direct air inlet:

- Boiler with nominal output between 25 and 70 kW in accordance with DTU 61.1 (NF P 45-204).

In the case of a direct air inlet, the compulsory cross section of the air vent must be of a minimum surface area of 70 cm^2 .

- Boiler with nominal output greater than 70 kW in accordance with DTU 65.4 (NF P 52-221).

Upper and lower air vents compulsory.

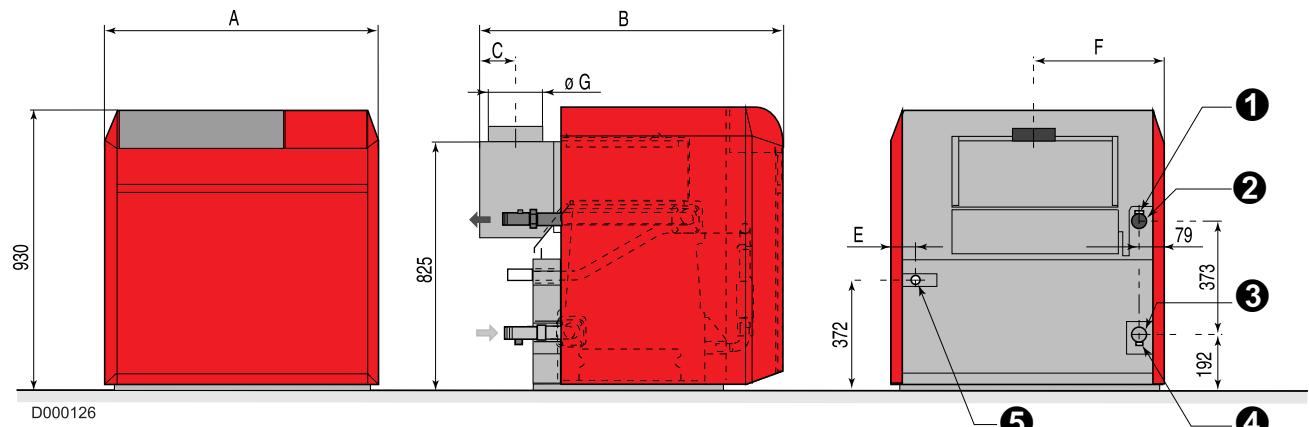
- **Upper air vents:** Cross section equal to half the total cross section of the flue gas pipes with a minimum of 2.5 dm^2 .

- **Lower air vents:**

Direct air inlet: $S(\text{dm}^2) \geq \frac{0.86P}{20}$

P = Installed power in kW

4.3.3 Main dimensions



- ① Connection for safety valves Rp 1
- ② Heating outlet R 1 1/2
- ③ Heating return R 1 1/2

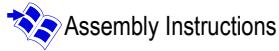
- ④ Draining Rp 3/4
- ⑤ Gas inlet R 1

DTG 230-... S	8	10	12	14
A	946	1113	1280	1447
B	952	1007	1007	1007
C	102	124	124	124
E	75	75	75	75
F	494	578	661	745
Ø G	180	200	200	225

R: Tapped connection

Rp: Thread

4.3.4 Assembling the appliance



4.4 Hydraulic connections

4.4.1 Regulations

Installation must be carried out in accordance with the prevailing regulations, the codes of practice and the recommendations in these instructions.

■ Installing the boiler in new installations (installations less than 6 months old)

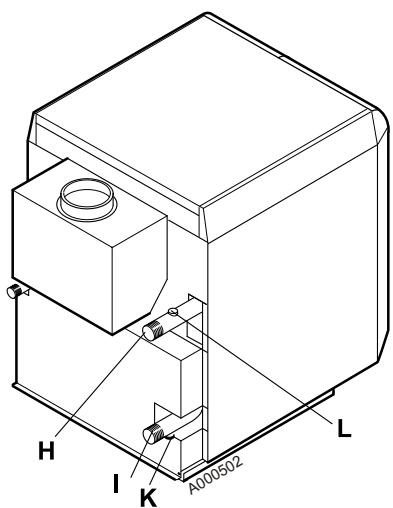
- Clean the installation with a universal cleaner to eliminate debris from the appliance (copper, flaxen thread, flux).

- Thoroughly flush the installation until the water runs clear and shows no impurities.

■ Installing the boiler in existing installations

- Remove sludge from the installation.
- Flush the installation.
- Clean the installation with a universal cleaner to eliminate debris from the appliance (copper, flaxen thread, flux).
- Thoroughly flush the installation until the water runs clear and shows no impurities.

4.4.2 Hydraulic connection of the heating circuit



H Heating outlet R1 1/2 ⁽¹⁾

I Heating return R1 1/2 ⁽¹⁾

K Draining Rp 3/4

L Auxiliary outlet or connection of the safety valve Rp1

(1) Welded connection possible after sawing off the threading.

Install a sludge decanting pot on the return pipe, very close to the boiler.

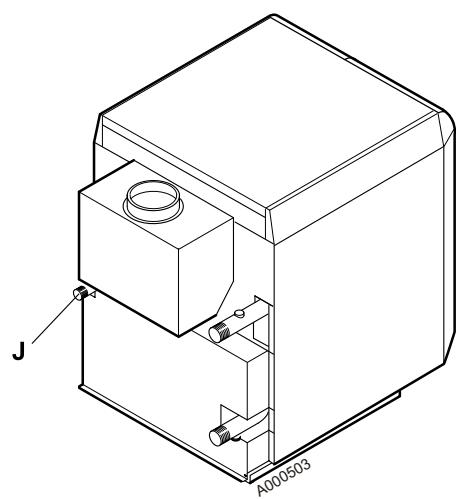
4.4.3 Hydraulic connection of the water circuit for domestic use



4.4.4 Water treatment

! Central heating systems must be cleaned to eliminate debris (copper, strands, brazing flux) linked to the installation of the system and deposits that can cause malfunctions (noise in the system, chemical reaction between metals). On the other hand, it is important to protect central heating systems against corrosion, scaling and microbiological growth by using a corrosion inhibitor adapted to all types of systems (steel, cast iron radiators, heated floor, PER)

4.5 Gas connection



J Gas inlet R1

It is necessary to abide by the prevailing instructions and regulations. Each time, a blocking tap will be located as near as possible to the heater. A **gas filter** must be fitted to the boiler inlet.

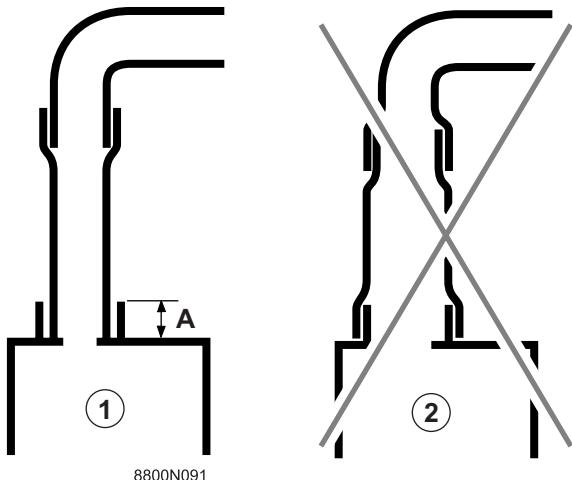
■ France

Pipe diameters must be defined in accordance with ATG's (Association Technique de Gaz) B171 specifications.

■ Other countries

The diameters of the pipes must be defined in accordance with the standards in force in your country.

4.6 Connection to a chimney



8800N091

① Good

② Poor

A 40 mm (minimum)

The appliance must be installed in accordance with the Codes of Practice using a leak proof pipe made of a material capable of withstanding hot combustion gases and any acidic condensation. The pipe must be laid out to allow any likely condensation to drain.

It must be in accordance with existing regulations for pipes used for this purpose. Standard meshed connection pipes are to be avoided. The pipe connecting the outlet conduit must also be as short as possible and without a reduced diameter.

The vertical section of the draught diverter outlet must be a minimum length 3x the diameter of the nozzle before an elbow joint is fitted.

The pipe must have a diameter not less than the heater's nozzle diameter along its whole length. This pipe must be able to be easily disassembled and must not have a sudden change in diameter.

The outlet conduit must be maintained in a good condition, checked and cleaned at least once a year.

4.7 Electrical connections

 Only qualified professionals may carry out electrical connections, always with the power off.

 Do not modify the connections inside the control panel.

Make the electrical connections of the appliance according to:

- the instructions of the prevailing standards,
- the instructions on the circuit diagrams provided with the appliance,
- the recommendations in the instructions.

■ Standards to be respected

France: Electrical connections must be in compliance with the NF C 15.100 standard.

Other countries: The electrical connections shall comply with standards in force.

■ Rules to be respected

- Power the appliance via a circuit which includes a remote omnipolar switch with a gap of more than 3 mm.

- Connect all of the cables to the terminal blocks in the control panel.

 Keep to the polarity shown on the terminals: phase (L), neutral (N) and earth \bar{N} .

 The available output per outlet is 450 W (2 A, with $\cos \phi = 0.7$) and the inrush current must be lower than 16 A.

If the charge exceeds one of these values, relay the command using a contactor (fitted outside the control panel).

 Separate the sensor cables from the 230 V cables.

Outside the boiler : Use 2 pipes or cable guides at least 10 cm apart.

For the 230 V electrical connections, use 3-wire cables with a cross-section of 0.75 mm². For other electrical connections, use the 3 wire cable with a diameter of 0.75 mm².

Make the electrical connections:

 Control panel instructions.

 Options brochure.

4.8 Skeleton Diagrams

 Control panel instructions

5 Start-up

 Initial commissioning must be done by a qualified professional.

5.1 Control panel

 Control panel instructions

5.2 Check points before commissioning

■ Hydraulic circuit

- Check that the installation and boiler are adequately filled with water and correctly irrigated and bled.
- Check that there are no leaks on the hydraulic connections.

■ Gas circuit

- Check that the appliance is properly set for the type of gas used. If this is not the case:

 Gas settings (Page: 20)

- Check the supply pressure.

- Check the nozzle pressure and the start-up pressure.

 Pressure setting and marking of calibrated injectors (page: 23)

- If necessary, adjust the pressures

 Setting the injector pressure (page: 21)

Setting the start up pressure (page: 22)

■ Electrical connectors

- Check that the connectors under the control panel are correctly fitted.

5.3 Commissioning procedure

 Initial commissioning must be done by a qualified professional.

1. Check the water pressure in the installation several times a year. Top up with more water if necessary.
2. Open the gas valve.
3. Make the settings on the control panel.

4. Turn the burner switch to **2** (2 stage version)

5. Check that the safety thermostat has not triggered. Remove the safety thermostat hood and press the reset button with a screwdriver.

6. Set the On/Off switch to **1**.

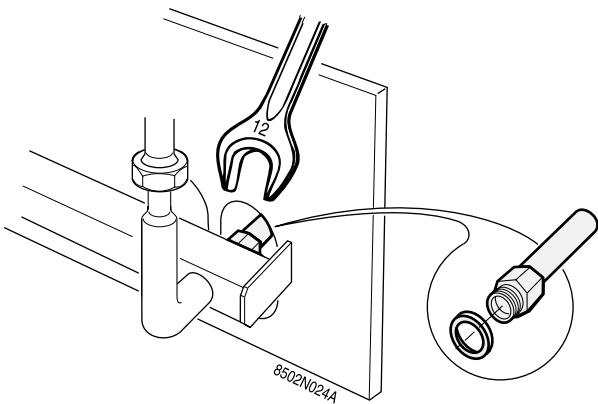
5.4 Gas settings

GAS 360 S boilers are delivered preset for operation on natural gases of H/E groups.

For operation on another group of gases, carry out the following operations.

5.4.1 Changing the burner injectors

 These actions must be carried out by a qualified technician.



 Cut the electricity and gas supply to the boiler.

Lift out the injector with a number 12 spanner assemble the new injectors with their new joint.

Nozzle marking	
Natural gas H	257B
Propane	160B

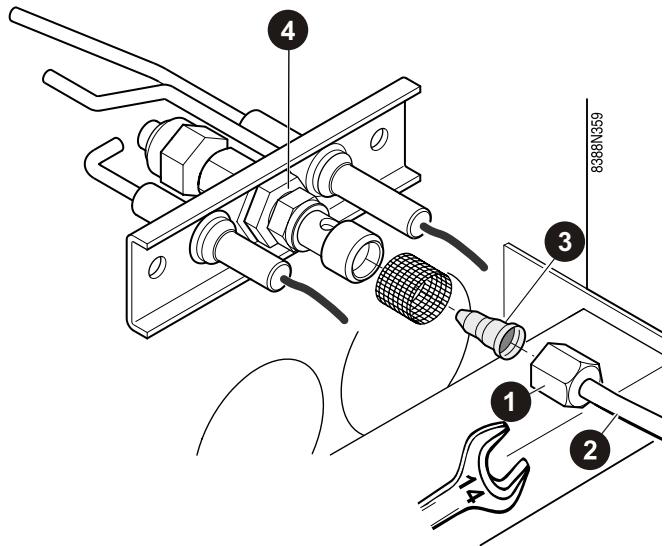
 **Assembly:**

Correctly replace the seals.

First tighten the injectors by hand and carefully lock them using a spanner.

 Carry out a gas tightness check.

5.4.2 Changing the ignition burner injector



1 Unscrew the connecting nut (14 spanner)

2 Pull the gas supply pipe towards yourself

3 Take out the ignition burner nozzle

4 Fit the new nozzle

Nozzle marking	
Natural gas H	40
Propane	30

Re-attach the supply tube (14 spanner)

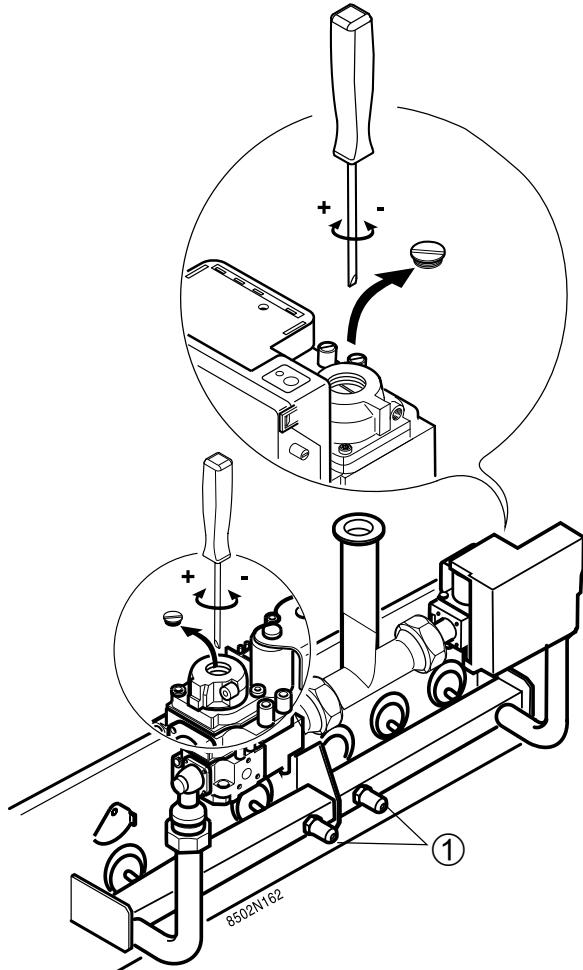
 Carry out a gas tightness check.

5.4.3 Setting the injector pressure

Turn the boiler on.

 Check points before commissioning (page: 19)
Commissioning procedure (page: 19)

 **The pressure must be set by a qualified professional.**



 Pressure socket

- Connect the manometer to the left or right pressure outlet on the manifold.
- Set the boiler thermostats to maximum.
- Unscrew the protection cap on each valve.
- Set the pressure on the left valve and the right valve using the screw which can be found under the protective plug.

 Pressure setting and marking of calibrated injectors (page:23)
The pressure must be the same **on both pressure outlets** on the manifold.

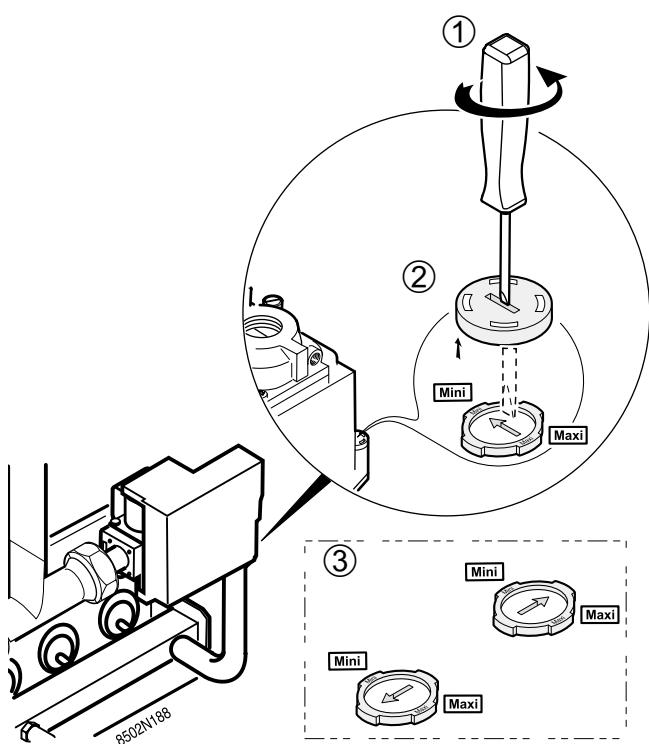
- Replace the protection caps.

 **i When replacing a gas valve:**

Check that the screw under the protection cap is fully tightened. Carefully set the pressure and progressivity at the opening as described in this chapter.

5.4.4 Setting the start up pressure

■ Right valve



① 1/4 turn

② Natural gas

③ Propane

If necessary, the start-up pressure can be set on the **right valve (1st stage)** using a flat screwdriver.

In the factory, it is set to **maximum**.

To modify this setting, it is necessary first to remove the protection using a screwdriver (1/4 turn).

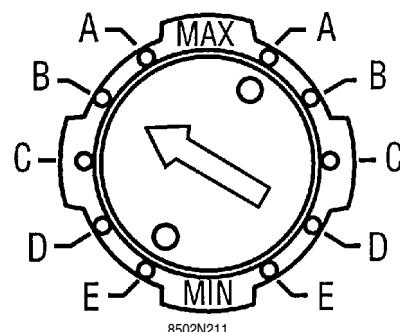
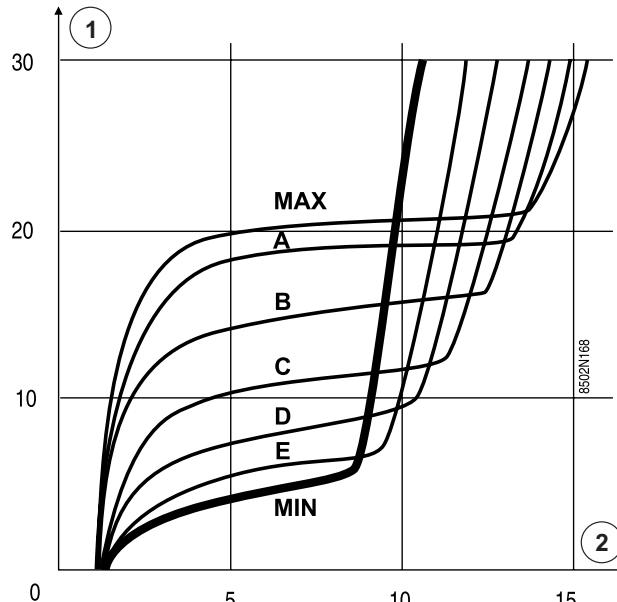
	Start-up pressure	Recommended position
Natural gas H	11 mbar	max
Propane	10 mbar	C (1/4 turn)

■ Left valve

The progressivity of the left valve (2nd stage) is always set to "Minimum" (8-12 sections).

No setting is needed on the left valve on a 14-element boiler.

■ Operation of the progressivity screw setting



① Pressure (mbar)

② Time (s)

5.4.5 Attaching the label

Affix the label which indicates for which type of gas the boiler is fitted and set.

5.4.6 Pressure setting and marking of calibrated injectors

Boilers Gas 360 S/		8	10	12	14
Nozzle pressure (1st stage + 2nd stage)					
Natural gas H	mbar	14	14	14	14
Propane	mbar	36	36	36	36
Start-up pressure					
Natural gas H	mbar	11	11	11	11
Propane	mbar	10	10	10	10
Nozzle					
Number of nozzles		7	9	11	13
Natural gas H/E		257B	257B	257B	257B
Propane		160B	160B	160B	160B
Gas flow rate - Stage2					
Natural gas H	m ³ /h ⁽¹⁾	7.29	9.35	11.41	13.46
Propane	Kg/h	5.35	6.87	8.37	9.88

(1) 15 °C - 1013 mbar

5.5 Checks and adjustments after commissioning

 Carry out all the checks mentioned in the chapter "Checking and maintenance" (Page: 25).

5.6 Changing the settings

 Control panel instructions

6 Stopping the boiler

Set the On/Off switch to .

6.1 Precautions to take if there is a danger of frost

Heating circuit:

Use a correctly dosed antifreeze to prevent the heating water freezing. If this cannot be done, drain the system completely. In all cases, consult the fitter.

Domestic hot water circuit:

Drain the domestic water tank and pipes.

6.2 Precautions to take in the event of prolonged shutdown (one year or more)

- Close the gas valve
- The boiler and the chimney must be swept carefully.
- Close the door of the boiler to prevent the internal circulation of air.

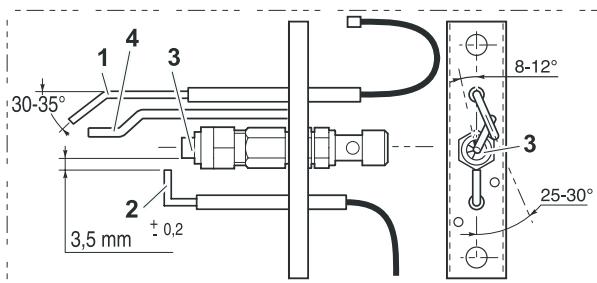
7 Checking and maintenance

7.1 Checks

Make the following checks at least 1 time a year:

- Checking the ignition burner
- Safety devices
- Water level
- Checking burner safety
- Checking the safety thermostat
- Checking the downdraught thermostat

7.1.1 Checking the ignition burner



Check the position of the ionization probe 1, the ignition electrode gap 2 and the position of the flame diffuser 3 in terms of the sizes indicated on the drawing (required in the event of heater malfunction).

7.1.2 Safety devices

Check the safety devices (particularly the valve or safety unit), referring to the instructions provided with these components.

7.1.3 Water level

Regularly check the level of water in the installation. Top it up, if need be, avoiding the abrupt input of cold water into the hot boiler. If this operation is repeated several times per season, locate the leak and repair it.

⚠ Do not drain the installation, except in cases of absolute necessity. For example: Several months' absence with the risk of ice in the building.

7.1.4 Checking burner safety

Close the gas valve.

Check the reaction of the safety system. (Safety box on safety because of ionization fault).

7.1.5 Checking the safety thermostat

Turn the 3 position switch to **TEST STB**. The burner starts regardless of the setting. Keep the switch in this position until the safety thermostat cuts (110°C).

To restart the heater, press the safety thermostat reset button and repeat the starting operations.

7.1.6 Checking the downdraught thermostat

In the event that flue gases overflow via the draught diverter, the anti-overflow safety system cuts off the electricity supply to the valve and the boiler goes into safety shutdown.

Check that the anti-overflow system is working correctly on commissioning for the first time and during annual servicing of the boiler.

■ Checking procedure

-  Only a qualified professional may carry out the check.
-  Ensure correct ventilation in the premises during the check.

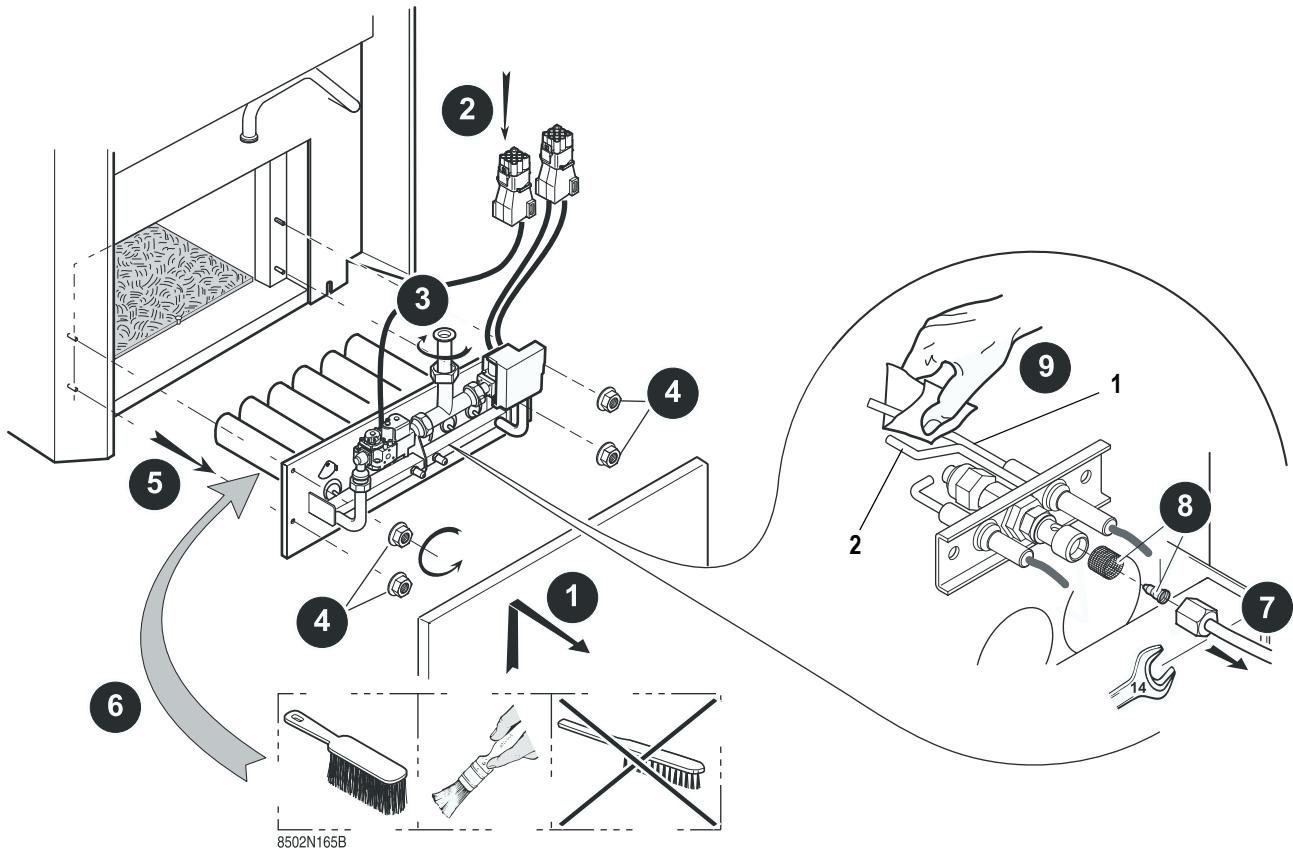
- Turn off the heater and take out the smoke duct linking the heater to the chimney. Block the boiler flue gas nozzle using a metal plate (or other heat-resistant material).
- On start up, combustion products are evacuated to the back of the heater by the anti-blowback device opening inside.
- The downdraught thermostat is tripped after a few moments and cuts the mains supply to the gas valve. The burner goes out.
- After checking, re-assemble the smoke duct connecting the heater to the chimney. Wait for around 5 minutes (thermostat cooling time) and press the reset button on the safety control box.

7.2 Maintenance

Carry out the following maintenance at least 1 time a year:

- Cleaning main burner and ignition burner
- Cleaning of the heating body
- Cleaning painted surfaces

7.2.1 Cleaning main burner and ignition burner



⚠ Cut the electricity and gas supply to the boiler.

■ Main burner

⑥ Clean the burner trains (slits) using a soft brush, a short-handled brush or a vacuum cleaner.

Do not use a metal brush.

⑦ On reassembly, replace the burner earth wire fixed to the right holding nut on the burner drawer.

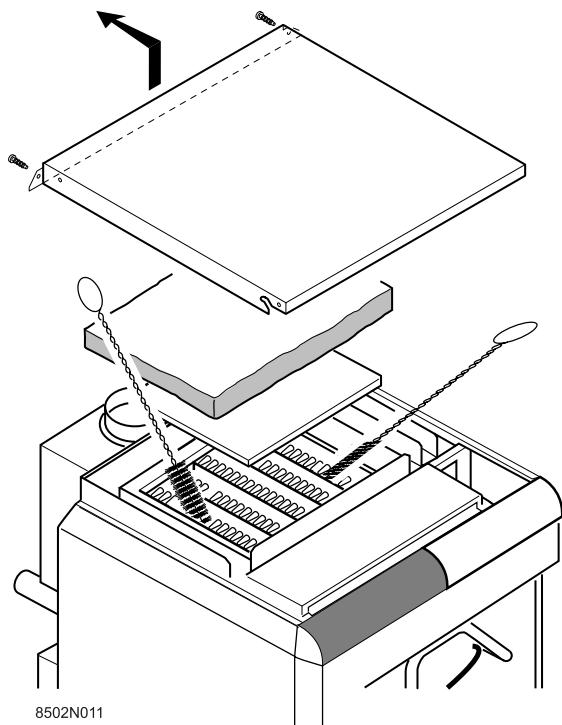
■ Ignition burner

⑧ Clean the filter and the ignition burner injector.

⑨ Remove ionization probe 1 and the earth electrode 2 deposits (for example using sand paper).

⚠ Carry out a gas tightness check.

7.2.2 Cleaning of the heating body



i The extent of clogging on the heating body must be checked once a year.

If it is necessary to sweep the boiler, remove the burner drawer to prevent deposits and soot blocking the orifices in the gas trains.

With the burner out:

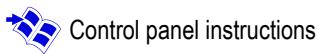
- Remove the upper panel from the boiler.
- Remove the top insulating material.
- Remove the sweeping hatch from the draught diverter.
- If necessary, clean the boiler body using the special brush provided.
- Clean the combustion chamber using a vacuum cleaner.

7.2.3 Cleaning painted surfaces

- Use a soapy solution and a sponge only.
- Rinse with clean water.
- Dry with a soft cloth or a chamois leather.

7.3 Troubleshooting

7.3.1 Error messages



7.3.2 Incidents and solutions

Symptoms	Probable causes	Solution
The heater does not start and the safety box is not affected (red alarm indicator off)	<p>The heater thermostat is requiring heat Setting (option) is not requiring heat</p> <p>The safety thermostat has been triggered after overheating</p> <p>No current</p>	<p>Create a demand by moving the heater thermostat or the setting level (option)</p> <p>Solve the cause of overheating and reset the safety thermostat</p> <p>Set the On/Off switch to ①</p>
The burner does not ignite and the safety box is not affected (red alarm indicator off)	<p>On safety because of a lack of gas</p> <p>1st stage gas valve defective</p> <p>No spark from the electrode</p> <p>Safety shutdown by the downdraught thermostat</p> <p>No ionization current</p> <p>Blocked filter or ignition burner injector</p>	<p>Purge the gas supply pipe then reset the heater using the panel reset button</p> <p>Check the gas valve and replace if necessary</p> <p>Check the electric cable connection to the safety box and the electrode</p> <p>Check for adequate draw on the chimney connection. Press the reset button on the safety control box</p> <p>Check the ionization probe and earth wire connection Check the position of the ionization probe and the flame diffuser in the ignition burner</p> <p>Clean the filter and the ignition burner injector</p>
The burner ignites and the safety box is affected (alarm indicator on)	downdraught thermostat cut.	<p>Check for adequate draw on the chimney connection. Reset the safety control box.</p> <p>Check that the downdraught thermostat is in good working order. Reset the safety control box.</p> <p>⚠ Please note the seriousness of unplanned intervention on the combustion product evacuation checking device: evacuation faults must be solved by improving the draught in the chimney.</p> <p>In the event of a thermostat fault, it must be replaced by a part stated on our "Spare parts list". Its position must not be modified, which is defined by the 2 bosses on the holding bracket which are located in the 2 holes on the draught diverter. The thermostat must not be placed out of service.</p>
The burner ignites but with reduced power	<p>Inversion of the phase and neutral wires on the heater's control panel.</p> <p>Upstream pressure too weak</p> <p>Dirty filter</p> <p>Gas valve unit defective</p> <p>Gas valve defective</p> <p>Nozzles and/or diaphragms unsuitable</p>	<p>Connect the phase to terminal 1 and neutral to 2.</p> <p>Check gas supply</p> <p>Clean the filter</p> <p>Replace the gas valve unit</p> <p>Check gas valve and replace if necessary</p> <p>Check them</p>
Dirty cast iron body (hearth)	<p>Upstream pressure too high</p> <p>Dirty burner</p> <p>Insufficient or incorrectly placed air supply</p> <p>Gas valve defective</p>	<p>Check gas supply</p> <p>Clean the burner</p> <p>Enlarge air supply, smoothen airation holes</p> <p>Check gas valve and replace if necessary</p>

Symptoms	Probable causes	Solution
Noisy heater	Poor purge	Purge correctly
	Body has scale	Descale the heating circuit
	Unsuitable injectors (Whistling)	Check injectors
Heater too hot or too cold for requirements	3 position switch on position 	Check the position of the 3 position switch
	Wrong setting for the heater thermostat	Set the heater thermostat if the heater has SV-matic setting or an ambient thermostat
Flame returns	Injectors too large	
	Pressure too weak	Check pressure injectors
Whistling	Injectors too small	
	Pressure too high	

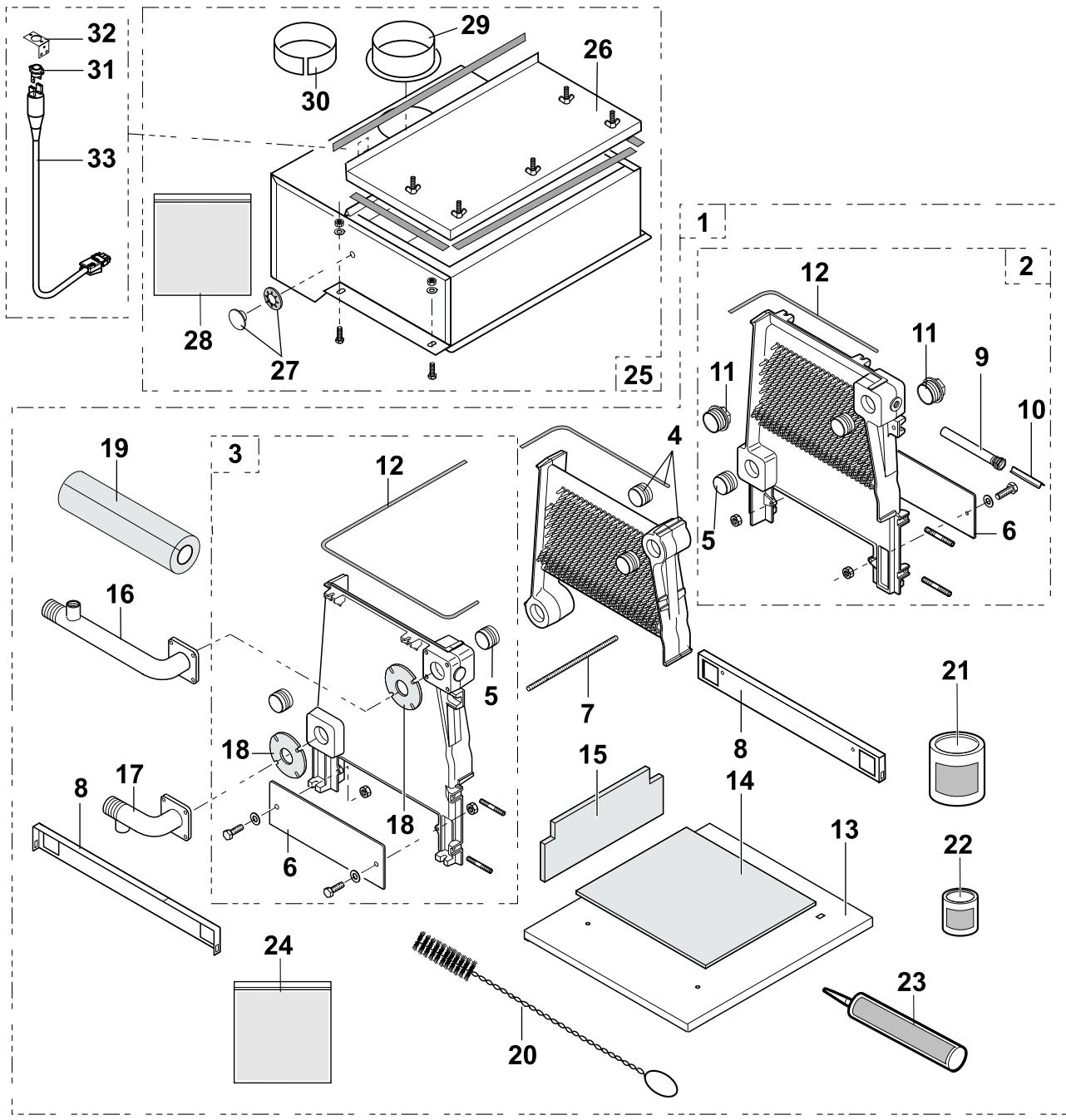
8 Spare parts - GAS 360 S

04/01/11 - 300005180-001-002-B

i

To order a spare part, give the reference number shown on the list

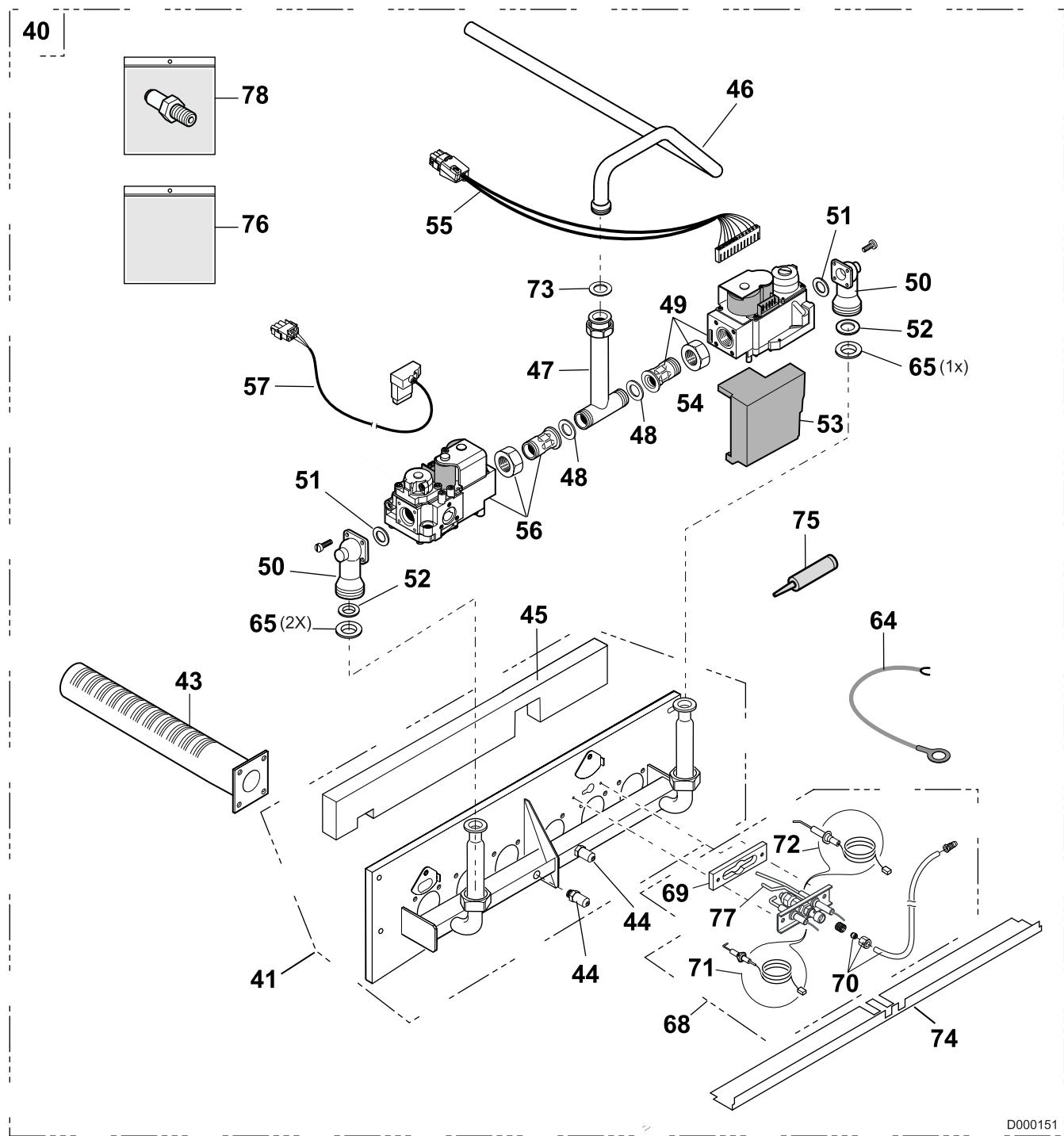
8.1 Boiler body + Draught diverter



8502N013B

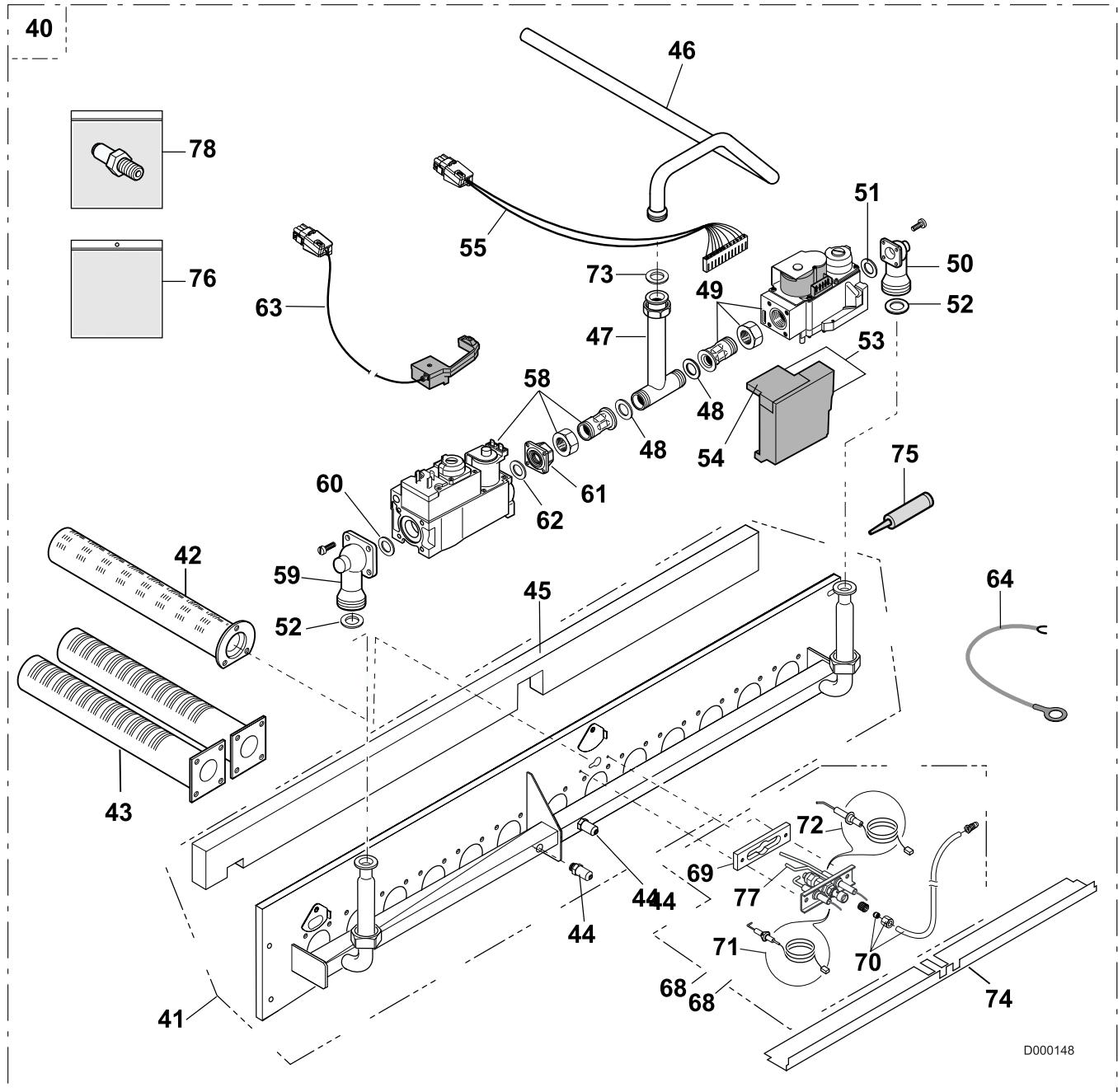
8.2 Gas line

8.2.1 8-10-12 sections



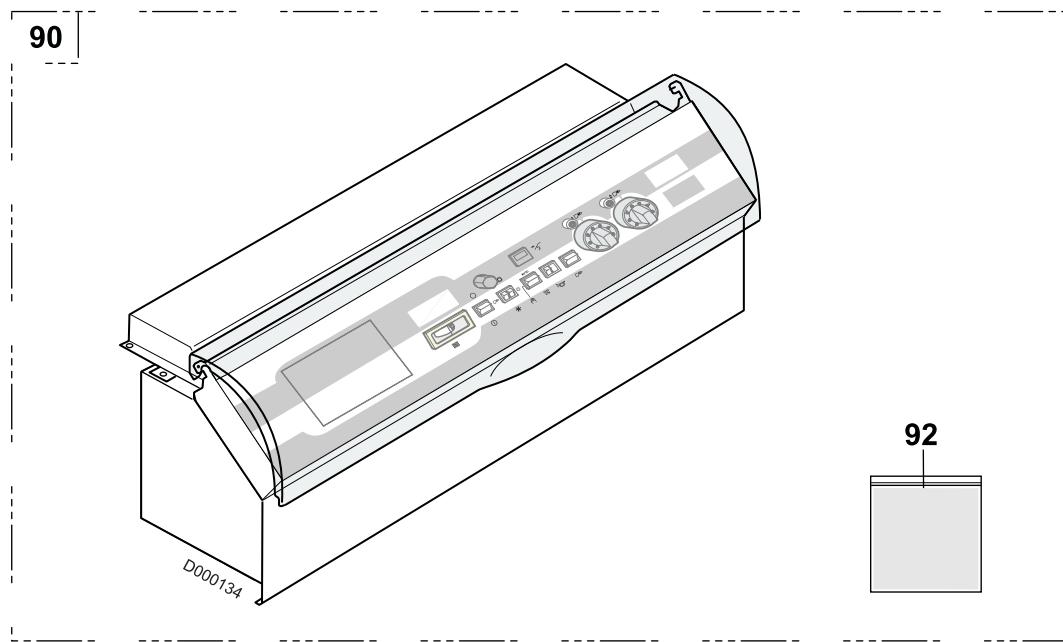
D000151

8.2.2 14 sections

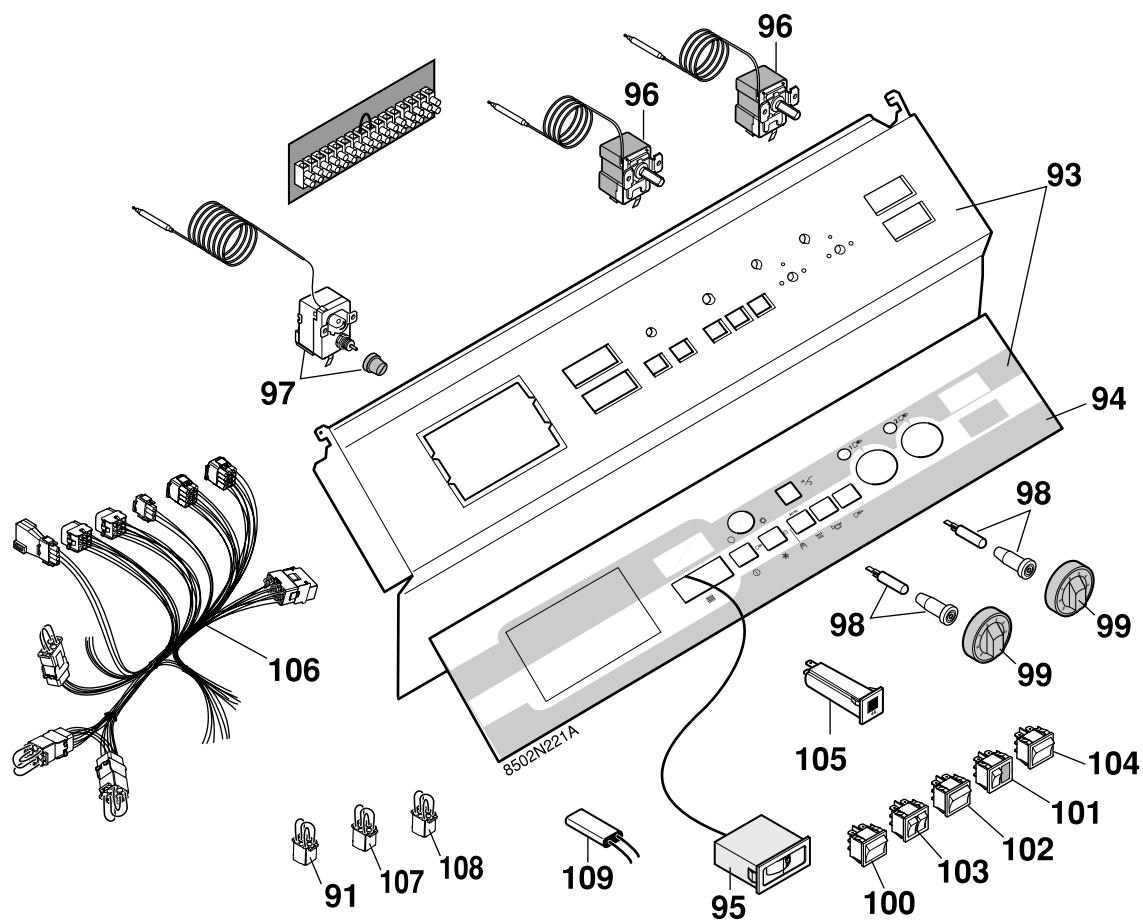


D000148

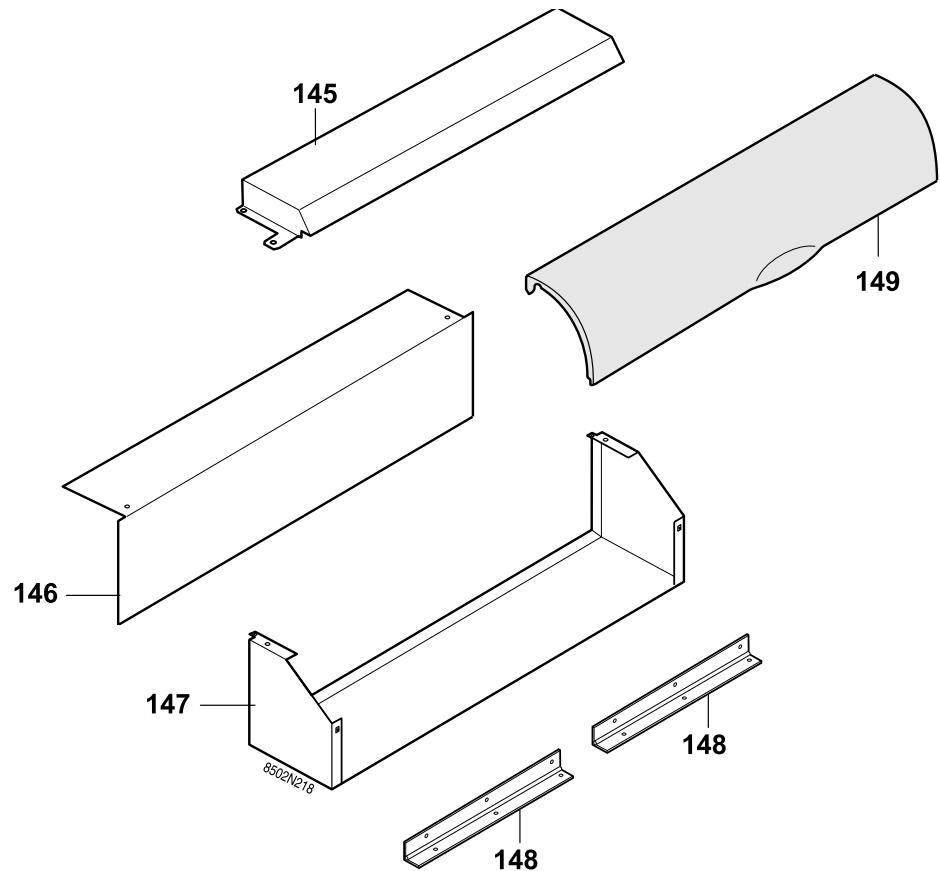
8.3 Control panel K



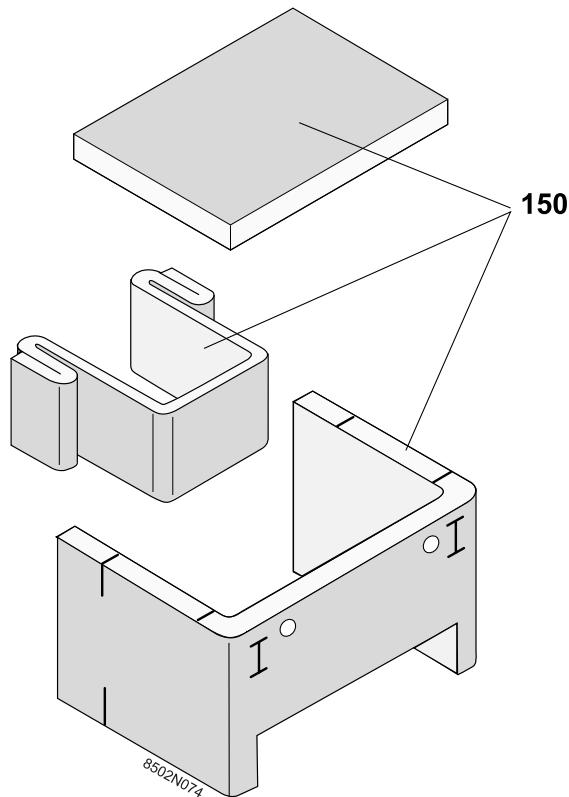
8.4 Control panel K + Components



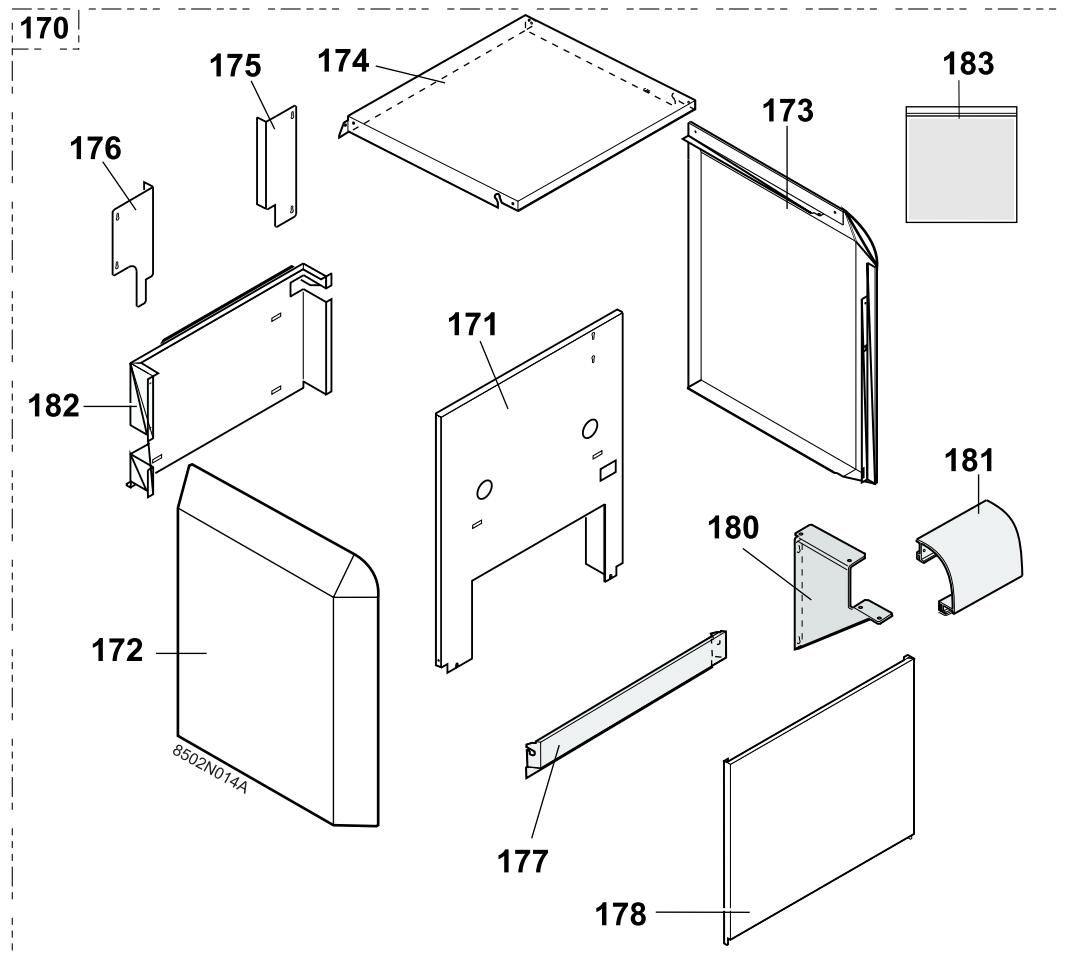
8.5 Metal casing for control panel K



8.6 Boiler body insulation



8.7 Casing



Markers	Code no.	Description
Boiler body		
1	8377-8911	Boiler body - 8 sections
1	8377-8913	Boiler body - 10 sections
1	8377-8915	Boiler body - 12 sections
1	8377-8917	Boiler body - 14 sections
2	8377-5500	Lateral section right
3	8377-5501	Lateral section left
4	8377-5502	Intermediate section
5	8377-0547	Painted nipple
6	8377-8920	Complete closing plate
7	8377-5503	Assembly rod M8 - LG580
7	8377-5504	Assembly rod M8 - LG660
7	8377-5505	Assembly rod M8 - LG750
7	8377-5506	Assembly rod M8 - LG830
7	8377-5507	Assembly rod M8 - LG910
7	8377-5508	Assembly rod M8 - LG1000
7	8377-5509	Assembly rod M8 - LG1080
7	8377-5510	Assembly rod M8 - LG1170

Markers	Code no.	Description
8	8377-8726	Complete assembly cross-bar
9	9536-5611	Sensor tube 1/2"
10	9536-5613	Contact spring for sensor tube
11	9495-0249	Plug nr.290 1" 1/2
12	9504-6127	Adhesive thermocord Ø10
13	8377-8905	Complete base frame - 8 sections
13	8377-8906	Complete base frame - 10 sections
13	8377-8907	Complete base frame - 12 sections
13	8377-8908	Complete base frame - 14 sections
14	9755-0728	Insulation under burner - 8 sections
14	9755-0730	Insulation under burner - 10 sections
14	9755-0732	Insulation under burner - 12 sections
14	9755-0734	Insulation under burner - 14 sections
15	9755-0718	Rear insulation - 8 sections
15	9755-0720	Rear insulation - 10 sections
15	9755-0722	Rear insulation - 12 sections
15	9755-0724	Rear insulation - 14 sections
16	9754-9668	Water flow pipe

Markers	Code no.	Description
17	9754-9660	Return pipe - 8 sections
17	9754-9670	Return pipe - 10 sections
17	9754-9671	Return pipe - 12 sections
17	9754-9672	Return pipe - 14 sections
18	9755-0189	Flange gasket
19	8377-4091	Water flow pipe insulation
20	9696-0228	Brush 22 x 11 L500
21	8800-8966	Box of mastic (1 kg)
22	9430-5027	Putty for nipple (300g)
23	9428-5066	Paste PERMABOND A1044
24	8377-5534	Accessories bag
Draught diverter		
25	8502-8640	Draught diverter complete - 8 sections
25	8502-8642	Draught diverter complete - 10 sections
25	8502-8644	Draught diverter complete - 12 sections
25	8502-8646	Draught diverter complete - 14 sections
	8502-1558	Painted draught diverter - 8 sections
	8502-1560	Painted draught diverter - 10 sections
	8502-1562	Painted draught diverter - 12 sections
	8502-1564	Painted draught diverter - 14 sections
26	8502-5501	Inspection hatch - 8 sections
26	8502-5503	Inspection hatch - 10 sections
26	8502-5505	Inspection hatch - 12 sections
26	8502-5507	Inspection hatch - 14 sections
27	8377-5533	Plug for draught diverter
28	8377-8708	Screw bag
29	9758-1497	Nozzle Ø 180
29	8116-8076	Nozzle Ø 200
29	8377-8146	Nozzle Ø 225
30	8377-8226	adapter ring Ø225 to 220
31	9536-3357	Limiting thermostat (fitted to 8 section boiler, option RD19 for 10 to 14 sections)
32	8375-8077	Mounting square
33	8502-4917	Electric circuit
184		Downdraught thermostat
Gas line		
40	200003830	Complete gas circuit - 8 sections
40	200003831	Complete gas circuit - 10 sections
40	300003832	Complete gas circuit - 12 sections
40	300003833	Complete gas circuit - 14 sections
41	8502-5571	Burner support - 8 sections
41	8502-5573	Burner support - 10 sections
41	8502-5575	Burner support - 12 sections
41	8502-5577	Burner support - 14 sections

Markers	Code no.	Description
42	8502-5557	FURIGAS interignition burner (under ignition burner)
43	8368-8595	FURIGAS burner
44	9536-0220	Pressure socket
45	8502-5600	Insulation, burner drawer - 8 sections
45	8502-5602	Insulation, burner drawer - 10 sections
45	8502-5604	Insulation, burner drawer - 12 sections
45	8502-5606	Insulation, burner drawer - 14 sections
46	9754-9041	Gas inlet pipe - 8 sections
46	9754-9042	Gas inlet pipe - 10-12 sections
46	9754-9043	Gas inlet pipe - 14 sections
47	9754-9353	Connecting pipe
48	9501-3062	Green joint Ø 30 x 21 x 2
49	8502-4704	Valve 1st stage HONEYWELL CVI
50	9754-9889	Elbow flange LOVATO
51	9502-3306	27.7 x 22.5 x 2.5 O-ring
52	9755-0196	Gasket 27.2 x 16 x 3
53	8502-5578	Safety box HONEYWELL
54	9536-5259	Cover, safety control box
55	8502-4922	Panel circuit - safety control box
56	8502-4705	Valve 2nd stage HONEYWELL CVI - 8-12 sections
57	8502-4923	Electric circuit Valve 2nd stage - 8-12 sections
58	8502-4706	Valve 2nd stage HONEYWELL CVI - 14 sections
59	9754-9839	Elbow flange LOVATO
60	9755-0178	Green joint Ø 30 x 21 x 2
61	9754-9231	Right flange 1/2"
62	9758-0632	O-ring
63	8502-4901	Electric circuit Valve 2nd stage - 14 sections
64	8368-4907	Earth wire
65	9536-9107	Diaphragm Ø6.5 24.3 x 1 - 8 sections
67	9501-3068	Green joint Ø 24 x 30 x 1.5
68	8502-8719	Complete ignition burner
69	8406-8092	Spacer
70	8502-5579	Ignition burner gas supply pipe
71	9758-0451	Wired ionization sensor with elbow
72	9533-2802	Wired ignition plug
73	9501-3064	Green joint Ø 32 x 44 x 2
74	8502-8108	Flame non-return plate - 8 sections
74	8377-8188	Flame non-return plate - 10 sections
74	8377-8190	Flame non-return plate - 12 sections
74	8377-8192	Flame non-return plate - 14 sections
75	8800-8961	Glue 1000 (100 ml can)

Markers	Code no.	Description
76	8502-5516	Screw bag
77	8502-4925	Earth liaison wire
Conversion set		
78	100003809	Propane conversion kit
78	100003840	Natural gas conversion kit H
Control panel K		
90	8502-8751	Control system
92	8502-5519	Fasteners
93	200003824	Front panel support + Control panel front cover
94	9421-0705	Control panel front cover K
95	9536-5157	Flat thermometer
96	8500-0002	Thermostat adjustable from 30 to 90°C
97	8500-0032	Safety thermostat 110°C
98	9521-6281	Round green indicator
99	8555-5501	Setting button + Pin
100	9532-5027	Green S/S bipolar switch
101	9532-5102	Reset switch
102	9532-5103	Test Switch STB
103	8500-0034	Bipolar switch
104	8500-0035	Bipolar switch
105	9534-0288	4A TS710/4A Circuit-breaker
106	8502-4921	Control panel harness K
107	8502-4913	Flue damper connector bridge
108	8377-4917	TAF connector bridge
109	8350-4805	EMI-supressor filter
110	8502-4925	Earth liaison wire
Metal casing for control panel K		
145	8502-5558	Protection cap
146	8502-8625	Card supports
147	8502-8778	Control panel bracket
148	8502-5560	Piano hinges (2 items)
149	8387-5556	Flap
Boiler body insulation		
150	8377-8932	Complete insulation - 8 sections
150	8377-8934	Complete insulation - 10 sections
150	8377-8936	Complete insulation - 12 sections
150	8377-8938	Complete insulation - 14 sections
Casing		
170	200003820	Complete casing - 8 sections
170	200003821	Complete casing - 10 sections
170	200003822	Complete casing - 12 sections
170	200003823	Complete casing - 14 sections
171	8502-8839	Front plate - 8 sections
171	8502-8841	Front plate - 10 sections

Markers	Code no.	Description
171	8502-8843	Front plate - 12 sections
171	8502-8845	Front plate - 14 sections
172	8502-8836	Complete left panel
173	8502-8837	Complete right panel
174	8502-0585	8 section cover
174	8502-0586	10 section cover
174	8502-0587	12 section cover
174	8502-0588	14 section cover
175	8502-8029	Upper rear panel, right
176	8502-8031	Upper rear panel, left
177	200003526	Complete upper front panel - 8 sections
177	200003527	Complete upper front panel - 10 sections
177	200003528	Complete upper front panel - 12 sections
177	200003529	Complete upper front panel - 14 sections
178	200003534	Complete lower front panel - 8 sections
178	200003535	Complete lower front panel - 10 sections
178	200003536	Complete lower front panel - 12 sections
178	200003537	Complete lower front panel - 14 sections
180	8502-8014	Support, additional part
181	8502-0600	Additional part - 8 sections
181	8502-0601	Additional part - 10 sections
181	8502-0602	Additional part - 12 sections
181	8502-0603	Additional part - 14 sections
182	8377-8173	Lower back panel - 8 sections
182	8377-8175	Lower back panel - 10 sections
182	8377-8177	Lower back panel - 12 sections
182	8377-8179	Lower back panel - 14 sections
183	8377-8702	Housing screws packet



NL Remeha B.V.
Postbus 32
7300 AA APELDOORN
Tel: +31 55 5496969
Fax: +31 55 5496496
Internet: nl.remeha.com
E-mail: remeha@remeha.com

GB Broag Ltd.
Remeha House
Molly Millars Lane
RG41 2QP WOKINGHAM, Berks.
Tel: +44 118 9783434
Fax: +44 118 9786977
Internet: uk.remeha.com
E-mail: boilers@broag-remeha.com

B J.L. Mampaey BVBA
Uitbreidingsstraat 54
2600 ANTWERPEN
Tel: +32 3 2307106
Fax: +32 3 2301153
Internet: www.mampaey.be
E-mail: info@mampaey.be

H Marketbau - Remeha Kft.
Gyár u. 2.
Ipari Park
2040 BUDAÖRS
Tel: +36 23 503 980
Fax: +36 23 503 981
Internet: www.remeha.hu
E-mail: remeha@remeha.hu

B Thema S.A.
6, Avenue de l'expansion
4460 GRACE-HOLLOGNE
Tel: +32 4 2469575
Fax: +32 4 2469576
Internet: www.thema-sa.be
E-mail: info@thema-sa.be

IRL Euro Gas Ltd.
Unit 38, Southern Cross Business Park
Boghall Road, Bray, Co
WICKLOW
Tel: +353 12868244
Fax: +353 12861729
Internet: www.eurogas.ie
E-mail: sales@eurogas.ie

E Termibarna S.A.
C. Zamora 55-59
08005 BARCELONA
Tel: +34 3 3000204
Fax: +34 3 3009558

IT Revis S.r.l
Via Trieste 4a
31025 Santa Lucia di Piave (TV)
Tel: +39 0438 701907
Fax: +39 02 36028583
Internet: www.re-vis.it
E-mail: info@re-vis.it

E D.A.C. S.A.
Tomás A. Edison 29
Polígono Cogullada
50014 ZARAGOZA
Tel: +34 76 464076
Fax: +34 76 471311
Internet: www.dac.es
E-mail: dac@dac.es

E Cuatrocesa S.A.
c) Sor Angela de La Cruz, 10
- 1º Oficina C
28020 MADRID
Tel: +34 91 658 18 88
Fax: +34 91 658 30 77

E Norte Comercial Organización S.A.
Bereteage Bidea, 19
48180 LOIU (Vizcaya)
Tel: +34 94 471 03 33
Fax: +34 94 471 11 52
E-mail: nco@nco.es

© Copyright

All technical and technological information contained in these technical instructions, as well as any drawings and technical descriptions supplied, remain our property and shall not be multiplied without our prior consent in writing.

Subject to alterations.

04/01/11



300005180-001-C

DR remeha